Sheenuga Industries Arts & Science College
T.V.Malai

APRIL/MAY 2025

FSC21/CSC21 — C++ AND DATA STRUCTURE

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Differentiate — Procedure-oriented and Object-oriented Programming.
2. List out the different types of Operators in C++.
3. What is Hierarchical Inheritance method?
4. Define the term — Abstract class.
5. Mention the classification of Data structures.
6. Define the term — Algorithm.
7. What is Expression tree?
8. Give an example for Polynomial representation.
9. Mention the methods to represent a Graph.
10. Define the term — Minimum cost spanning tree.

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Discuss on different types of Control structures in C++.

Or

(b) Describe the importance of Function Prototyping and Inline functions.

12. (a) Explain the working of Multiple Inheritance mechanism using example.

Or

(b) Discuss on the fundamentals of Pointers.

13. (a) Describe the basics and representation of Arrays.

Or

(b) Explain the basics of Priority Queues and Multiple Queues.

14. (a) Discuss on the basics of Circular Linked list and the operations on it.

Or

(b) Describe the method of Traversing a Binary tree.

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15. (a) Explain the working of Bubble sort algorithm with a numeric example.

Or

(b) Describe the functioning of Dijkstra's algorithm to find the shortest path.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the features of Constructors and Destructors using examples.

17. Describe the method of opening, closing a File and Error handling during File operations.

18. Discuss on the Array representation of Stack and the operations on a Stack.

19. Explain the basics of Binary Search tree and the operations on it.

20. Describe the Graph Traversal algorithms using examples.

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